Teraptor System Prototyping Platform

A complex electronic (embedded) system comprises of a network of several computers (nodes) networked using a data communication bus with several embedded software threads running on the different nodes, sensing the environment, communicating and collaborating to implement the desired functionality of the system through a set of actuators.

Examples of such complex systems include data and communication equipment, industrial and power plant control applications, aerospace applications and automotive electronic applications. Each such vertical application is often characterized by the use of a specific kind of communication bus best suited to meet the needs of the specific industry.

Creating such a new system or system of systems is immensely complex. Teams often take a long time just bringing together the various hardware components and creating a system development lab. As can be expected of any new system development, several components that are necessary may not even be available at the time of project start.

Naturally, complex system design and development requires a prototyping platform. Such a prototyping platform needs to be an abstraction of the real system, allow system level architectural exploration, while at the same time allowing various players working as part of a large development team to design and update components of the prototype, which are then made available instantly to the rest of the development team.

In general, a complex system can be viewed from the following view points:

1) As a complete functioning system by the user and system architect
2) As a set of domain models by the domain expert
3) As a set of interacting software components or threads by the software architect
4) As a set of interacting hardware components by the hardware architect

As an example, ECUs (electronic control units), a CAN Bus and associated CAN Controllers will form the hardware model for a complex system. Individual software threads such as driver interface thread, engine control thread and display thread may form components of the software model, which together realize the control algorithms designed for torque production and consumption in the automotive domain model.

Sankhya Technologies, a global technology leader in the electronic processor, system and system of system modeling platforms offers ready to use, packaged prototyping platforms – targeted towards the development of applications for specific markets such as automotive electronic product development and aerospace application development.

These system prototyping platforms, more popularly termed as Teraptor Channel SPP's ensure a straight through design flow from system specification, software prototyping through hardware prototyping and system realization.

All SPPs are bundled with a user friendly IDE, stub domain models necessary to kick-start your projects, sample system level software applications and all of the essential hardware models to execute the software. SPPs are packed with a customizable device skin with necessary HMIs and Simulated IO streams that allow complex systems to be put together and tested.